

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. *(Original)* A method comprising the steps of:
  - (a) suspending a quantity of functionalized carbon nanotubes in a solvent to form a suspension of functionalized carbon nanotubes; and
  - (b) heating said suspension to a temperature that will thermally defunctionalize the functionalized carbon nanotubes yielding a defunctionalized product.
2. *(Original)* The method of Claim 1, wherein the carbon nanotubes are selected from the group consisting of single-wall carbon nanotubes (SWNTs), multi-wall carbon nanotubes (MWNTs), double-wall carbon nanotubes, semiconducting carbon nanotubes, metallic carbon nanotubes, semi-metallic carbon nanotubes, chiral carbon nanotubes, buckytubes, carbon fibrils, and combinations thereof.
3. *(Currently Amended)* The method of Claim 1 or 2, wherein the solvent is thermally stable at the temperatures required for defunctionalization.
4. *(Currently amended)* The method of ~~Claims 1-2, or 3~~ Claim 1, wherein the solvent is selected from the group consisting of o-dichlorobenzene, benzene, toluene, water, sulfuric acid, oleum, sulfuric acid with dissolved potassium persulfate, liquid ammonia, liquid ammonia with dissolved alkali metals, alkanes, parafins, thiophene, and combinations thereof.
5. *(Currently amended)* The method of ~~Claims 1-3, or 4~~ Claim 1, wherein the suspension is completely enclosed in a vessel.

6. *(Currently amended)* The method of ~~Claims 1-4, or 5~~ Claim 1, wherein the suspension further comprises a polymeric species.

7. *(Currently amended)* The method of ~~Claims 1-5, or 6~~ Claim 1, wherein the suspension further comprises a surfactant.

8. *(Currently amended)* The method of ~~Claims 1-6, or 7~~ Claim 1, wherein the defunctionalized product is selected from the group consisting of unfunctionalized carbon nanotubes, partially functionalized carbon nanotubes, and combinations thereof.

9. *(Currently amended)* The method of ~~Claims 1-7, or 8~~ Claim 1, wherein the defunctionalized product is functionally uniform.

10. *(Currently amended)* The method of ~~Claims 1-8, or 9~~ Claim 1, wherein the defunctionalized product is resuspendable in a solvent.

11. *(Currently amended)* The method of ~~Claims 1-9, or 10~~ Claim 1, wherein the functionalized carbon nanotubes are selectively defunctionalized according to different (n,m) types, said types displaying differential propensity for defunctionalization.

12. *(Original)* A method comprising the steps of:

- (a) dispersing a quantity of functionalized carbon nanotubes in a polymer matrix to form a first blended material comprising functionalized carbon nanotubes in a polymer host; and
- (b) heating said first blended material to a temperature that will thermally defunctionalize the functionalized carbon nanotubes with the polymer host to yield a second blended material comprising defunctionalized or partially defunctionalized carbon nanotubes in a polymer host.

13. *(Original)* The method of Claim 12, wherein the carbon nanotubes are selected from the group consisting of single-wall carbon nanotubes (SWNTs), multi-wall carbon nanotubes (MWNTs), double-wall carbon nanotubes, semiconducting carbon nanotubes, metallic carbon nanotubes, semi-metallic carbon nanotubes, chiral carbon nanotubes, buckytubes, carbon fibrils, and combinations thereof

14. *(Currently amended)* The method of Claim 12 or 13, wherein the defunctionalized carbon nanotubes are selected from the group consisting of unfunctionalized carbon nanotubes, partially functionalized carbon nanotubes, and combinations thereof.